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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/805,765	03/22/2004	Michael Platte	2924	1253

7590 07/22/2005

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EXAMINER	
ABOAGYE, MICHAEL	
ART UNIT	**PAPER NUMBER**
1725	

DATE MAILED: 07/22/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/805,765	PLATTE ET AL.	
	Examiner	Art Unit	
	Michael Aboagye	1725	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *22 March 2004*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-21* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-21* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *22 March 2004* is/are: a)☐ accepted or b)☒ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date *3/22/2004*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

Detailed Action

Drawings

1. Figure 1- 4 should be designated by a legend such as --Prior Art-- because only that which is old is illustrated. See MPEP § 608.02(g). Corrected drawings in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. The replacement sheet(s) should be labeled "Replacement Sheet" in the page header (as per 37 CFR 1.84(c)) so as not to obstruct any portion of the drawing figures. If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. Claim 1,4,5,13- 17, 20 and 21 are rejected under 35 U.S.C. 102(b) as being anticipated by Vogt (US Patent no. 6414260).

Vogt discloses a connecting element as claimed. Vogt shows a connecting element for connecting and/or fixing an electrode with an electrode arm of a welding

apparatus, comprising a base body; and a sensor selected from the group consisting of a sensor for introducing ultrasound waves into an electrode, a sensor for receiving ultrasound waves, and both (Fig.1 and 2, column 3, line 58 – column 4, line 14).

Referring to claim 4, Vogt shows a sensor arranged on a base body of the connecting element (column 4, lines 1- 29).

Regarding claim 5, Vogt shows a sensor being arranged in the recess of the base body (column 4, lines 1- 25).

Regarding claim 13 and 14, Vogt teaches a development which provides the sensor with a sound influencing medium in a way as to avoid undesirable reflection or damping of the ultrasonic waves (column 3, line 28 – column 4 line 52)

Regarding claim 20, note that the connecting element (6) has a hole in which is mounted the sensor (48) which is in contact with the end side of the electrode. Note also that the sensor is considered as being cylindrical in shape (Fig. 1)

Vogt discloses a holding device for holding electrodes for resistance welding, comprising an electrode arm; and a connecting element which is connected with said electrode arm, said connecting element including a base body, and a sensor selected from the group consisting of a sensor for introducing ultrasound waves into an electrode, a sensor for receiving ultrasound waves, and both (Fig.1; column 3, lines 27-57)

Referring to claim 16, Vogt shows a holding device further comprising a second electrode arm with a second connecting element, formed so that a sensor for introducing ultrasound waves into an electrode is arranged in one of said connecting

elements and a sensor for receiving ultrasound waves is arranged in another of said connecting elements (column 3, lines 27 – 57).

Referring to claim 17, Vogt shows a holding device wherein the electrode arm has a diameter, which is greater than a diameter of the electrode, said electrode arm being provided at an end side with an opening for receiving a portion of the electrode (Fig.1; column 5, lines 1- 24).

Referring to claim 21, Vogt shows a holding device, wherein said connecting element has an opening, said sensor being cylinder-shaped and mounted in said opening of said connector element, and also being in contact with an end side of said electrode (Fig.1)

4. Claim 1,4-9, and 15-21 are rejected under 35 U.S.C. 102(b) or alternatively 35 U.S.C. 102(a) as being anticipated by applicant admitted prior art (AAPA).

AAPA shows a connecting element for connecting and/or fixing an electrode with an electrode arm of a welding apparatus, comprising a base body; and a sensor selected from the group consisting of a sensor for introducing ultrasound waves into ultrasound waves, and both. an electrode, a sensor for receiving ultrasound waves or both.

Regarding claims 4-9; note that AAPA shows a connecting element
With a sensor arranged on the base body, said sensor is arranged in a recess of said base body, the connecting element is formed as a clamping element, which is connectable with an electrode arm so that it fixes the electrode in a clamping

seat, wherein said clamping element has an inner contour, which corresponds to an outer contour of the electrode, and further comprising screw means for connecting the clamping element with a counter plate which is formed as a collar-shaped extension of said electrode arm, said counter plate is formed of one piece with said electrode arm the connecting element is composed of a material which has same or substantially similar acoustic properties as a material of the electrode (specification, page 19 – 22, and Fig.1- 4).

AAPA shows a holding device for holding electrodes for resistance welding, comprising an electrode arm; and a connecting element which is connected with said electrode arm, said connecting element including a base body, and a sensor selected from the group consisting of a sensor for introducing ultrasound waves into an electrode, a sensor for receiving ultrasound waves, and both.

Regarding claims 15 – 21, AAPA shows a holding further comprising a second electrode arm with a second connecting element, formed so that a sensor for introducing ultrasound waves into an electrode is arranged in one of said connecting elements and a sensor for receiving ultrasound waves is arranged in another of said connecting elements, wherein said electrode arm has a diameter which is greater than a diameter of the electrode, said electrode arm being provided at an end side with an opening for receiving a portion of the electrode, said electrode arm has a counterplate with which the connecting element is connectable for clamping of the electrode, said counter plate is formed as a collar-shaped extension of said electrode arm, with which said connecting element is connectable for clamping of the electrode by screw

means, wherein said connecting element has an opening, said sensor being cylinder-shaped and mounted in said opening of said connecting element, and also being in contact with an end side of said electrode (specification, page 19 – 22, and Fig.1- 4).

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

5. Claim 2,3,11 and 12 are rejected under 35 U.S.C. 103(a) as being unpatentable over either Vogt or applicant admitted prior art (AAPA) in view of Waschkies (US Patent no. 5920014).

Vogt or applicant admitted prior art (AAPA) discloses all the elements of claim 1. Vogt and AAPA individually teach a sensor for introducing and/ or receiving of ultrasound waves into an electrode but not specifically that the wave group consists of transverse ultrasound waves, shear waves or torsion waves.

However Waschkies teaches a process for assessing welding joints using sensors wherein said sensor is a sensor for introducing and/or receiving of ultrasound waves selected from the group consisting of transverse ultrasound waves, shear waves and torsion waves, having frequency smaller than 1Mhz. Waschkies further teaches that the ultrasound waves are introduced into the electrode in an orientation selected from

the group consisting of an orientation substantially parallel to a longitudinal axis of the electrode and an angle smaller than 90° to a longitudinal axis of the electrode. (Column 5, line 61- column 7, line 63).

It would have been obvious to one of ordinary skill in the art at the time invention was made to utilize shear waves and in particular transverse waves or torsion waves in either Vogt or AAPA connecting element in view of Waschkies to achieve good propagation behavior of the sound waves in the electrode for sonic inspection (Waschkies; column 7, lines 24- 49).

6. Claim 10 is rejected under 35 U.S.C. 103(a) as being unpatentable over either Vogt or applicant admitted prior art (AAPA) in view of Maev et al. (US Patent no. 6297467).

Vogt and AAPA individually disclose all the elements of claim 1 but do not specifically disclose a sensor, which includes a piezo element.

However Maev et al. teaches a transducer built in an electrode with an ultrasonic probe comprising piezoelectric crystal (Fig.2 and column 3, lines 30- 59).

It would have been obvious to one of ordinary skill in the art at the invention was made to provide either Vogt or AAPA connecting element with a sensor that includes a piezo element to vibration and thereby induce a burst of acoustic energy (Maev et al.; column 3, line 39 – column 4, line 67).

Conclusion

9. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Bilge et al. (US 4711984), Saglio (US 3739628), Tsao et al. (US 4480475) and Burbank et al. (US 3384733) are cited of interest for illustrating the state of the art of ultrasound testing of welds.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Michael Aboagye whose telephone number is 571-272-8165. The examiner can normally be reached on Mon - Fri 8:30am - 5pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Thomas Dunn can be reached on 571-272-1171. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

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7/20/2005

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